

What is Claimed is:

1. An adjustable and detachable binding device for binding up one or more objects, comprising an elongated binding member, which has a length substantially longer than a diameter of said object, having a head end, an opposed tail end, a head portion defining at said head end, and a tail portion defining at said tail end, wherein a plurality of locking holders are spacedly and integrally formed along said tail portion of said binding member, wherein a loop locker is integrally formed at said head portion of said binding member to detachably engage with one of said locking holders to form a binding loop of said binding member for fittingly binding up said object, wherein said binding member is bent between a matting position and a locking position, wherein at said matting position, said loop locker is guided to one of said locking holders so as to selectively adjust a diameter of said binding loop, and at said locking position, said loop locker is detachably engaged with said respective locking holder to retain said diameter of said binding loop with respect to said object, while said loop locker is allowed to be detached from said respective locking holder when said head portion of said binding member is moved to said matting position.

2. An adjustable and detachable binding device, as recited in claim 1, wherein said locking holder respectively comprise a plurality of locking teeth integrally and alignedly formed along a longitudinal edge of said tail portion of said binding member to define a holding neck portion on said binding member at a root portion of each of said locking teeth, said holding neck portion of each of said locking teeth having a width smaller than a width of said binding member, wherein said loop locker comprise means for detachably engaging with said holding neck portion of said respective locking tooth to form said binding loop.

3. An adjustable and detachable binding device, as recited in claim 2, wherein said engaging means of said loop locker contains an elongated locker slot longitudinally formed on said head portion of said binding member, wherein said locker slot has a longitudinal length substantially larger than said width of said binding member and a transverse width which is larger than a thickness of said binding member and is larger than said width of said holding neck portion of each of said locking teeth in such a manner that when said tail portion of said binding member is twisted to align to said longitudinal length of said locker slot, said tail portion of said binding member is allowed

to slidably pass through said locker slot while said tail portion of said binding member is then twisted back to overlap on said head portion thereof to lock up said holding neck portion of said corresponding locking tooth at said locker slot by the transverse width thereof, so as to form said binding loop of said binding member.

5 4. An adjustable and detachable binding device, as recited in claim 3, wherein said locker slot, having a triangular shaped, has a width gradually increasing towards said head end of said binding member, wherein said longitudinal length of said locker slot is defined along an adjacent edge thereof for said tail portion of said binding member to slidably inserting therethrough.

10 5. An adjustable and detachable binding device, as recited in claim 4, wherein said locker slot further has a longitudinal guiding width defining at a height of said locker slot, wherein said longitudinal guiding width of said locker slot at least equals to said width of said binding member.

15 6. An adjustable and detachable binding device, as recited in claim 2, wherein each of said locking teeth has a guiding edge having an outer end formed at said longitudinal edge of said tail portion of said binding member and an inner end inclinedly and inwardly extended on said binding member towards said tail end thereof to define said holding neck portion on said binding member at said inner end of said guiding edge of each of said locking teeth.

20 7. An adjustable and detachable binding device, as recited in claim 4, wherein each of said locking teeth has a guiding edge having an outer end formed at said longitudinal edge of said tail portion of said binding member and an inner end inclinedly and inwardly extended on said binding member towards said tail end thereof to define said holding neck portion on said binding member at said inner end of said guiding edge
25 of each of said locking teeth.

 8. An adjustable and detachable binding device, as recited in claim 5, wherein each of said locking teeth has a guiding edge having an outer end formed at said longitudinal edge of said tail portion of said binding member and an inner end inclinedly and inwardly extended on said binding member towards said tail end thereof to define
30 said holding neck portion on said binding member at said inner end of said guiding edge of each of said locking teeth.

9. An adjustable and detachable binding device, as recited in claim 3, wherein said tail end of said binding member has a tapered shape having a width substantially smaller than said transverse width of said locker slot such that said tapered tail portion of said binding member is guided to slide through said locker slot when said
5 tail end of said binding member is inserted therethrough.

10. An adjustable and detachable binding device, as recited in claim 8, wherein said tail end of said binding member has a tapered shape having a width substantially smaller than said transverse width of said locker slot such that said tapered tail portion of said binding member is guided to slide through said locker slot when said
10 tail end of said binding member is inserted therethrough.

11. An adjustable and detachable binding device, as recited in claim 8, wherein each of said locking teeth further has a locking edge transversely and inwardly extended from said outer end of said guiding edge to said inner end of said adjacent guiding edge such that said locking teeth are continuously extended along said
15 longitudinal edge of said tail portion of said binding member.

12. An adjustable and detachable binding device, as recited in claim 10, wherein each of said locking teeth further has a locking edge transversely and inwardly extended from said outer end of said guiding edge to said inner end of said adjacent guiding edge such that said locking teeth are continuously extended along said
20 longitudinal edge of said tail portion of said binding member.

13. An adjustable and detachable binding device, as recited in claim 6, wherein said guiding edge of each of said locking teeth is extended inclinedly at a direction corresponding to an inserting direction of said tail portion of said binding member such that said locking teeth are allowed to slide through said locker slot at said
25 inserting direction while said locking teeth are blocked up at said transverse width at an ejecting direction which is opposed to said inserting direction.

14. An adjustable and detachable binding device, as recited in claim 8, wherein said guiding edge of each of said locking teeth is extended inclinedly at a direction corresponding to an inserting direction of said tail portion of said binding
30 member such that said locking teeth are allowed to slide through said locker slot at said

inserting direction while said locking teeth are blocked up at said transverse width at an ejecting direction which is opposed to said inserting direction.

15. An adjustable and detachable binding device, as recited in claim 12,
wherein said guiding edge of each of said locking teeth is extended inclinedly at a
5 direction corresponding to an inserting direction of said tail portion of said binding
member such that said locking teeth are allowed to slide through said locker slot at said
inserting direction while said locking teeth are blocked up at said transverse width at an
ejecting direction which is opposed to said inserting direction.

16. An adjustable and detachable binding device, as recited in claim 3,
10 wherein said locker slot, having a rectangular shaped, has an even width longitudinally
extended along said head portion of said binding member, wherein said longitudinal
length of said locker slot is defined at a longitudinal edge thereof and said transverse
width of said locker slot is defined at a transverse edge thereof.

17. An adjustable and detachable binding device, as recited in claim 6,
15 wherein said locker slot, having a rectangular shaped, has an even width longitudinally
extended along said head portion of said binding member, wherein said longitudinal
length of said locker slot is defined at a longitudinal edge thereof and said transverse
width of said locker slot is defined at a transverse edge thereof.

18. An adjustable and detachable binding device, as recited in claim 2,
20 wherein each of said locking teeth is formed by an elongated slit inclinedly cut on said
tail portion of said binding member from said longitudinal edge thereof, wherein each of
said locking teeth has a guiding edge having an outer end formed at said longitudinal
edge of said tail portion of said binding member and an inner end inclinedly and inwardly
extended on said binding member towards said tail end thereof to define said holding
25 neck portion on said binding member at said inner end of said guiding edge of each of
said locking teeth.

19. An adjustable and detachable binding device, as recited in claim 6,
wherein each of said locking teeth is formed by an elongated slit inclinedly cut on said
tail portion of said binding member from said longitudinal edge thereof, wherein each of
30 said locking teeth has a guiding edge having an outer end formed at said longitudinal
edge of said tail portion of said binding member and an inner end inclinedly and inwardly

extended on said binding member towards said tail end thereof to define said holding neck portion on said binding member at said inner end of said guiding edge of each of said locking teeth.

20. An adjustable and detachable binding device, as recited in claim 17,
5 wherein each of said locking teeth is formed by an elongated slit inclinedly cut on said tail portion of said binding member from said longitudinal edge thereof, wherein each of said locking teeth has a guiding edge having an outer end formed at said longitudinal edge of said tail portion of said binding member and an inner end inclinedly and inwardly
10 extended on said binding member towards said tail end thereof to define said holding neck portion on said binding member at said inner end of said guiding edge of each of said locking teeth.

21. An adjustable and detachable binding device, as recited in claim 3,
wherein said locker slot has a longitudinal engaging portion having a width larger than said thickness of said binding member and a longitudinal locking portion said integrally
15 extended from said engaging portion towards said head end of said binding member, wherein said locking portion has a width gradually increasing from said engaging portion in such a manner that when said respective locking tooth said is locked at said locker slot said after said tail portion of said binding member is guided to slide through said locker slot via said engaging portion thereof, said holding neck portion of said respective
20 locking tooth is retained at said locking portion of said locker slot.

22. An adjustable and detachable binding device, as recited in claim 6,
wherein said locker slot has a longitudinal engaging portion having a width larger than said thickness of said binding member and a longitudinal locking portion said integrally
25 extended from said engaging portion towards said head end of said binding member, wherein said locking portion has a width gradually increasing from said engaging portion in such a manner that when said respective locking tooth said is locked at said locker slot said after said tail portion of said binding member is guided to slide through said locker slot via said engaging portion thereof, said holding neck portion of said respective locking tooth is retained at said locking portion of said locker slot.

30 23. An adjustable and detachable binding device, as recited in claim 6,
wherein each of said locking teeth is formed by an elongated slit inclinedly cut on said tail portion of said binding member from said longitudinal edge thereof, wherein each of

said locking teeth has a guiding edge having an outer end formed at said longitudinal edge of said tail portion of said binding member and an inner end inclinedly and inwardly extended on said binding member towards said tail end thereof to define said holding neck portion on said binding member at said inner end of said guiding edge of each of
5 said locking teeth.

24. An adjustable and detachable binding device, as recited in claim 22, wherein each of said locking teeth is formed by an elongated slit inclinedly cut on said tail portion of said binding member from said longitudinal edge thereof, wherein each of
10 said locking teeth has a guiding edge having an outer end formed at said longitudinal edge of said tail portion of said binding member and an inner end inclinedly and inwardly extended on said binding member towards said tail end thereof to define said holding neck portion on said binding member at said inner end of said guiding edge of each of said locking teeth.

25. An adjustable and detachable binding device, as recited in claim 2, wherein said locking teeth, having even thickness, are parallelly extending to said
15 longitudinal edge of said tail portion of said binding member to form as a comb shape so as to define said holding neck portion on said binding member at a root portion of each of said locking teeth.

26. An adjustable and detachable binding device, as recited in claim 25, wherein said locker slot, having a triangular shaped, has a width gradually increasing
20 towards said head end of said binding member, wherein said longitudinal length of said locker slot is defined along an adjacent edge thereof for said tail portion of said binding member to slidably inserting therethrough.

27. An adjustable and detachable binding device, as recited in claim 25, wherein said locker slot, having a rectangular shaped, has an even width longitudinally
25 extended along said head portion of said binding member, wherein said longitudinal length of said locker slot is defined at a longitudinal edge thereof and said transverse width of said locker slot is defined at a transverse edge thereof.

28. An adjustable and detachable binding device, as recited in claim 25, wherein said locker slot has a longitudinal engaging portion having a width larger than
30 said thickness of said binding member and a longitudinal locking portion said integrally

extended from said engaging portion towards said head end of said binding member, wherein said locking portion has a width gradually increasing from said engaging portion in such a manner that when said respective locking tooth said is locked at said locker slot said after said tail portion of said binding member is guided to slide through said locker slot via said engaging portion thereof, said holding neck portion of said respective locking tooth is retained at said locking portion of said locker slot.

29. An adjustable and detachable binding device, as recited in claim 1, wherein said locking holders respectively contains a plurality of locking holes spacedly and alignedly formed between two longitudinal edges of said tail portion of said binding member, each of said locking holes, having a predetermined diameter, adapted to be deformed to slightly increase said diameter thereof wherein said loop locker comprises a locker member detachably inserted into one of said locking holes to form said binding loop.

30. An adjustable and detachable binding device, as recited in claim 28, wherein said locker member has a narrowed neck portion integrally protruded from said head portion of said binding member and an enlarged inserting head which is extended from said narrowed neck portion and has a diameter larger than a diameter of said narrowed neck portion, a diameter of each of said locking holes being substantially larger than said diameter of said narrowed neck portion and slightly smaller than said diameter of said inserting head in such a manner that when said locker member is concentrically inserted into one of said locking holes, said respective locking hole is slightly deformed to allow said inserting head to pass therethrough while said narrowed neck portion of said locker member is locked at said respective locking hole so as to retain said binding loop of said binding member.

31. An adjustable and detachably binding device, as recited in claim 30, wherein said inserting head of said locker member has a tapered shape having a diameter substantially reducing towards a free end thereof so as to enhance said inserting head to slidably insert into said respective locking hole.

32. An adjustable and detachable binding device, as recited in claim 1, wherein said locking holders respectively contains a plurality of locking holes spacedly and alignedly formed between two longitudinal edges of said tail portion of said binding member, wherein said loop locker contains at least a retaining hole formed at said head

portion of said binding member, wherein said tail portion of said binding member is folded to overlap with said head portion thereof to align said retaining hole with one of said locking hole so as to adjust said diameter of said binding loop of said binding member, wherein said loop locker further comprises a hole locker detachably and
5 slidably passing said retaining hole through said respective locking hole to lock up said head portion of said binding member with said tail portion thereof so as to retain said binding loop of said binding member.